

*AMENDMENTS TO THE CLAIMS*

1. (Currently Amended) A heat exchanger ~~of~~including plate ~~fin~~fins and tube ~~type~~ comprising:

a plurality of fins stacked at ~~given~~respective intervals ~~to one another~~, and  
 a plurality of heat exchanger tubes penetrating said fins in ~~the~~a fin-stacking direction, said heat exchanger ~~being designed to perform a mutual~~exchanging heat exchange ~~between a~~first fluid inside said heat exchanger tubes and ~~another~~a second fluid outside said heat exchanger tubes, through said heat exchanger tubes and said fins, wherein

each of said fins ~~is provided with~~includes a plurality of cut-raised portions, at least one ~~or more~~ cut-raised ~~portions~~portion corresponding to each of said heat exchanger tubes and being disposed substantially only within a region of said fin satisfying ~~the following relationship~~,

$$W_s = (1 - \phi) D_p + \phi D$$

$$\phi > 0.5,$$

~~wherein~~  $W_s$  is ~~an~~ entire spread width of said at least one ~~or more~~ cut-raised ~~portions~~portion corresponding to each of said heat exchanger tubes in a column direction ~~defined as a direction that extending~~extends along an end of said fin on ~~the~~an upstream side of ~~said the second fluid outside said heat exchanger tubes~~,

$D$  is an outer diameter of each of said heat exchanger tubes<sub>;</sub> and

$D_p$  is ~~an~~ alignment pitch of said heat exchanger tubes in ~~said the~~the column direction.

2. (Currently Amended) The heat exchanger according to claim 1, wherein said at least one ~~or more~~ cut-raised ~~portions~~portion corresponding to each of said heat exchanger tubes ~~are~~is disposed only in a region of said fin which falls within 130 ~~degree~~degrees in ~~the~~a central angle of ~~said the~~ corresponding heat exchanger tube, toward ~~the~~an upstream or downstream direction of ~~said the second fluid outside said heat exchanger tubes~~.

3. (Currently Amended) The heat exchanger according to claim 1 ~~or 2~~, wherein said cut-raised portion has two opposite edges disconnected from ~~the~~a main body of said fin, at least one of said edges extending obliquely relative to ~~said~~the column direction.

4. (Currently Amended) The heat exchanger according to ~~any one of claims~~  
claim 1 to 3, wherein said cut-raised portion has two opposite edges disconnected from ~~the~~a main body of said fin, at least one of said edges extending in ~~the~~a radial direction of ~~said~~the corresponding heat exchanger tube.

5. (Currently Amended) The heat exchanger according to ~~any one of claims~~  
claim 1 to 4, wherein said cut-raised portion has two opposed side ends ~~not disconnected from the~~connected to a main body of said fin, at least one of said side ends extending in a direction perpendicular to ~~said~~the column direction.

6. (Currently Amended) The heat exchanger according to claim 1,  
~~wherein~~including at least two or more cut-raised portions ~~are provided for each of said~~  
heat exchanger tubes, said cut-raised portions being disposed symmetrically with respect to an axis passing through the center of said corresponding heat exchanger tube and extending in a direction perpendicular or parallel to ~~said~~the column direction.

7. (Currently Amended) The heat exchanger according to ~~any one of claims~~  
claim 1 to 5, wherein said cut-raised portion has a shape raised alternately in ~~the~~a  
longitudinal direction of said heat exchanger tubes, based on ~~the basis of the~~a main body of said fin.

8. (Currently Amended) The heat exchanger according to ~~any one of claims~~  
claim 1 to 6, wherein said fin ~~is provided with~~includes a convex-shaped protrusion continuously extending in ~~said~~the column direction.

9. (Currently Amended) The heat exchanger according to ~~any one of claims~~  
claim 1 to 8, wherein said cut-raised ~~portions~~portion is cut and raised from ~~the~~a main  
body of said fin to form a bridge shape which has a leg segment connected to said main  
body, and a beam segment spaced apart from said main body.